

- 1 THE TERMINATION RESISTOR MUST BE PRESENT IN EVERY PANEL BUT IT MUST BE CONNECTED TO XCOM1 BY SHORTING XCOM1:1 & XCOM1:2 , XCOM1:3 & XCOM1:4
- 2 VT IS THE VOLTAGE TRANSFORMER
- 3 CTs & VTs ARE TO BE CONNECTED TO THE METERS VIA FT-SWITCH
- 4 H1 IS ANTI-CONDENSATION HEATER TO BE CONNECTED TO 127/220VAC
- 5 USE GROUP MARKER FOR GROUP MARKING
- 6 USE FERRULING FOR CABLE MARKING
- 7 FOR EXTERNAL WIRING OF THE PANELS REFER CABLE SCHEDULING OF THE SUBSTATIONS & FOR TESTING FOLLOW THE TEST DOCUMENTS
- 8 NEUTRAL SHOULD NOT BE CONNECTED TO TH1 THERMOSTAT
- 9 CONNECT RESISTOR R4 BETWEEN TERMINAL 5 & 6 OF XCOM1 & GROUND TERMINAL 6 OF XCOM1 USING YELLOW GREEN WIRE
- 10 ALL THE TERMINAL BLOCKS HAVING EXTERNAL WIRING CONNECTIONS LIKE VT.CT.AC/DC TERMINAL BLOCKS SHOULD HAVE WIRE CONNECTION ON THE SIDE OF TERMINAL BLOCK NOT CLOSE TO PANEL ACCESS DOOR
- 11 ALL THE FERRULES SHOULD BE OUTSIDE RACEWAY, NEAR CONNECTOR & EASILY READABLE WIHTOUT TURNING OR MOVING WIRES.
- 12 FOR CONNECTIONS/FERRULING PLEASE FOLLOW THE TABLE ON SHEET 17
- 13 FOR CONNECTIONS/FERRULING PLEASE FOLLOW THE TABLE ON SHEET 17
- 14 FOR CONNECTIONS/FERRULING PLEASE FOLLOW THE TABLE ON SHEET 17
- 15 FOR CONNECTIONS/FERRULING PLEASE FOLLOW THE TABLE ON SHEET 17
- 16 FOR CONNECTIONS/FERRULING PLEASE FOLLOW THE TABLE ON SHEET 17
- 17 WHEN CONNECTING ELECTRICAL WIRES FOR THE RELAYS MAKE SURE TO CONNECT ON THE SIDE MARKED 'A' FOR ALL PIN NUMBERS
18. FQ1 AND FQ2 ARE THE FIELD CONTACTS ASSOCIATED WITH THE BUS COUPLER DISCONNECTORS FOR SWITCHING.
- 19 XO ARE LOCATED INSIDE THE METERING PANEL


SEC CAD-A 12004/00
[DMS] [VECTOR]

NOTES

1. EXISTING PANEL NOS AND EXISTING DRAWING NOS TO BE VERIFIED AT SITE

LEGEND

| REFERENCE DRAWINGS | |
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| DRAWING TITLE | DRAWING NO. |
| DRAWING CONTROL SHEET | CD-293969 |
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| AS-BUILT BY  DATE | |
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| 1 | 13/07 MRA DETAIL DESIGN MRA AS |
| 0 | 12/01 MRA BASE DESIGN MRA AS |
| REV. NO. | DATE BY DESCRIPTION CHKD. CERT. APPD. |

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Saudi Electricity Company

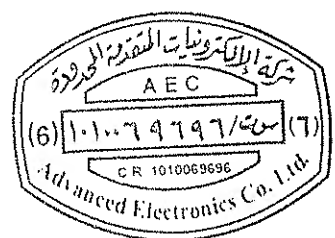
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SCHEMATIC DIAGRAM, AMR, DCU PANEL
WITH 1 POM WITH RELAY + 1 RM W/O RELAY
S/S 8182
RIYADH SAUDI ARABIA

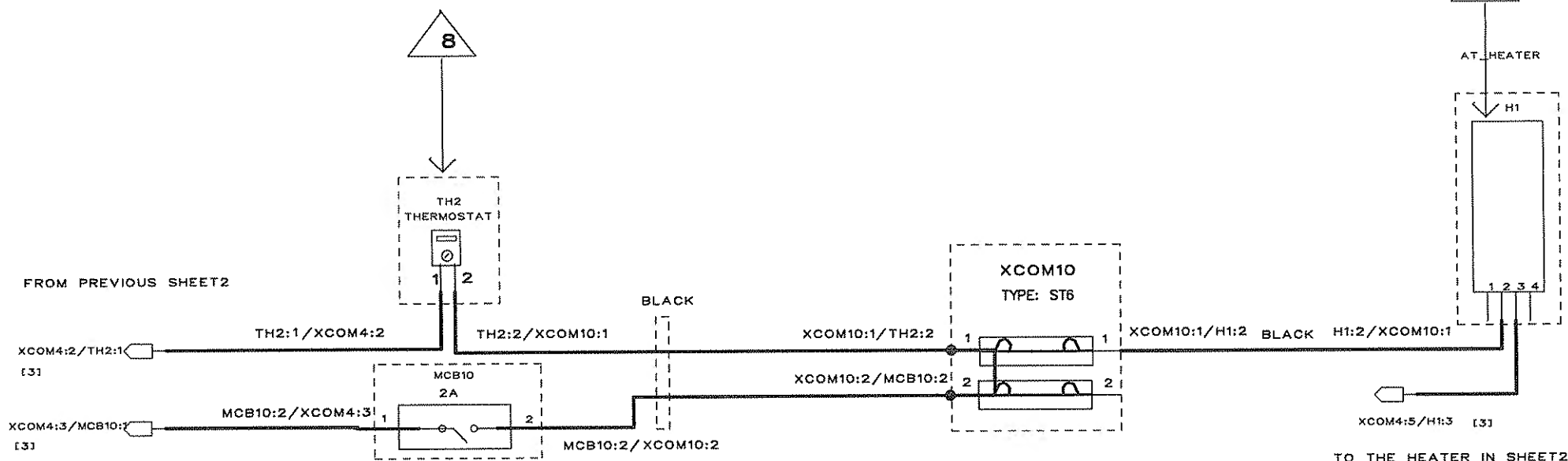
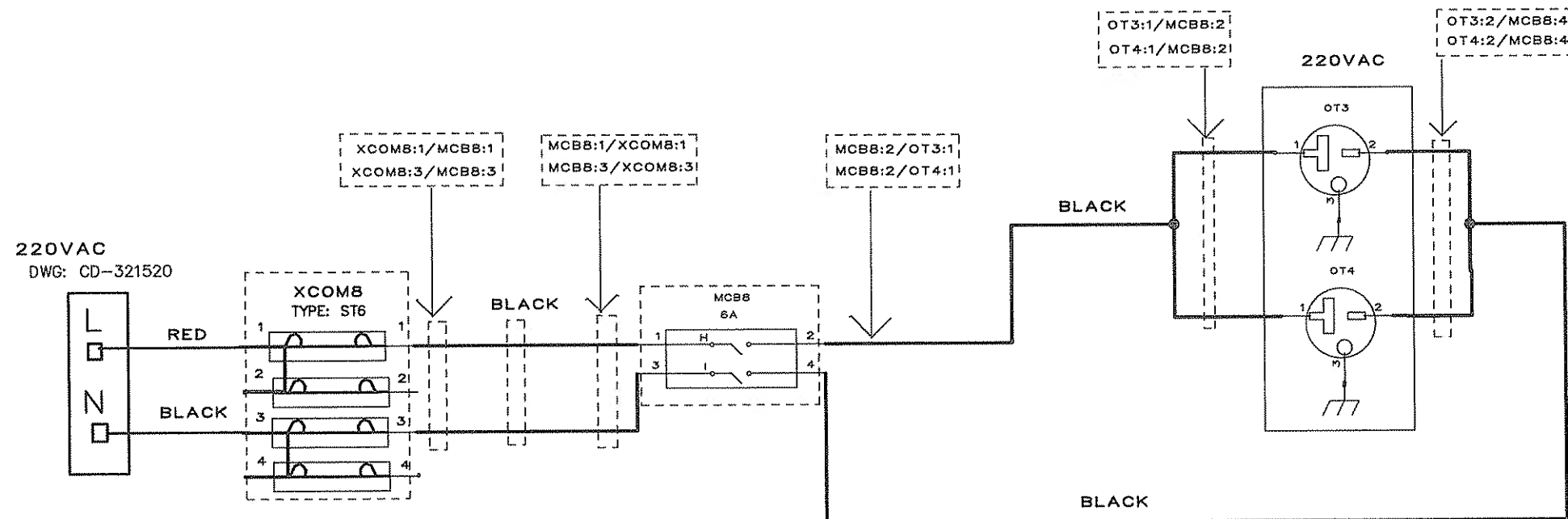
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| JOB ORDER NO. | INDEX | PLANT NO. | DRAWING NUMBER | SHEET NO. | REV. NO. |
| 1131113/00 | P | C469 | CD-320881 | 02 OF 17 | 01 |

NOTES UNLESS OTHERWISE SPECIFIED: (CONTINUED)

- 20 SPECIAL CABLES TO BE USED WITH DC/DC CONVERTER
- 21 DIAL UP IS THE DEFAULT COMMUNICATION BUT IF GSM IS USED THEN A GSM MODEM & SPECIFIC ANTENNA HAS TO BE PLACED INSTEAD OF DIAL UP MODEM & CONNECTED TO COM2 OF THE DCU
- 22 GSM MODEM IS TO BE POWERED USING 6 PIN RJ11 CABLE WITH OPEN ENDS. SHORT WIRES 1 AND 4 OF THE CABLE & CONNECT TO TERMINAL BLOCK 4 OF XCOM20 & WIRE 6 OF CABLE TO TERMINAL BLOCK 8 OF XCOM20. THE OTHER END OF CABLE SHOULD BE CONNECTED TO RJ11 PORT OF THE GSM MODEM
- 23 TERMINAL 10 IN XC1 TO XC4 TO BE CLOSED IF CT CIRCUIT IS NOT EARTHED ANY OTHER PLACE



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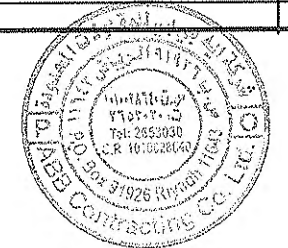
NOTES

1. EXISTING PANEL NOS AND EXISTING DRAWING NOS TO BE VERIFIED AT SITE

LEGEND

AT_HEATER - ANTI CONDENSATION HEATER
H1 - ANTI CONDENSATION HEATER
OT3, OT4 - AC POWER OUTLET
ACDB - AC DISTRIBUTION BOARD

| DRAWING TITLE | | DRAWING NO. |
|-----------------------|--|-------------|
| DRAWING CONTROL SHEET | | CD-293969 |
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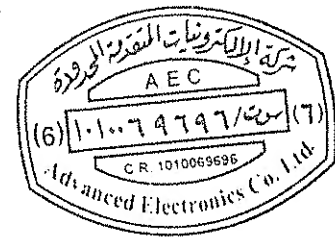
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DOC NO. E-123456 REV NO. 00

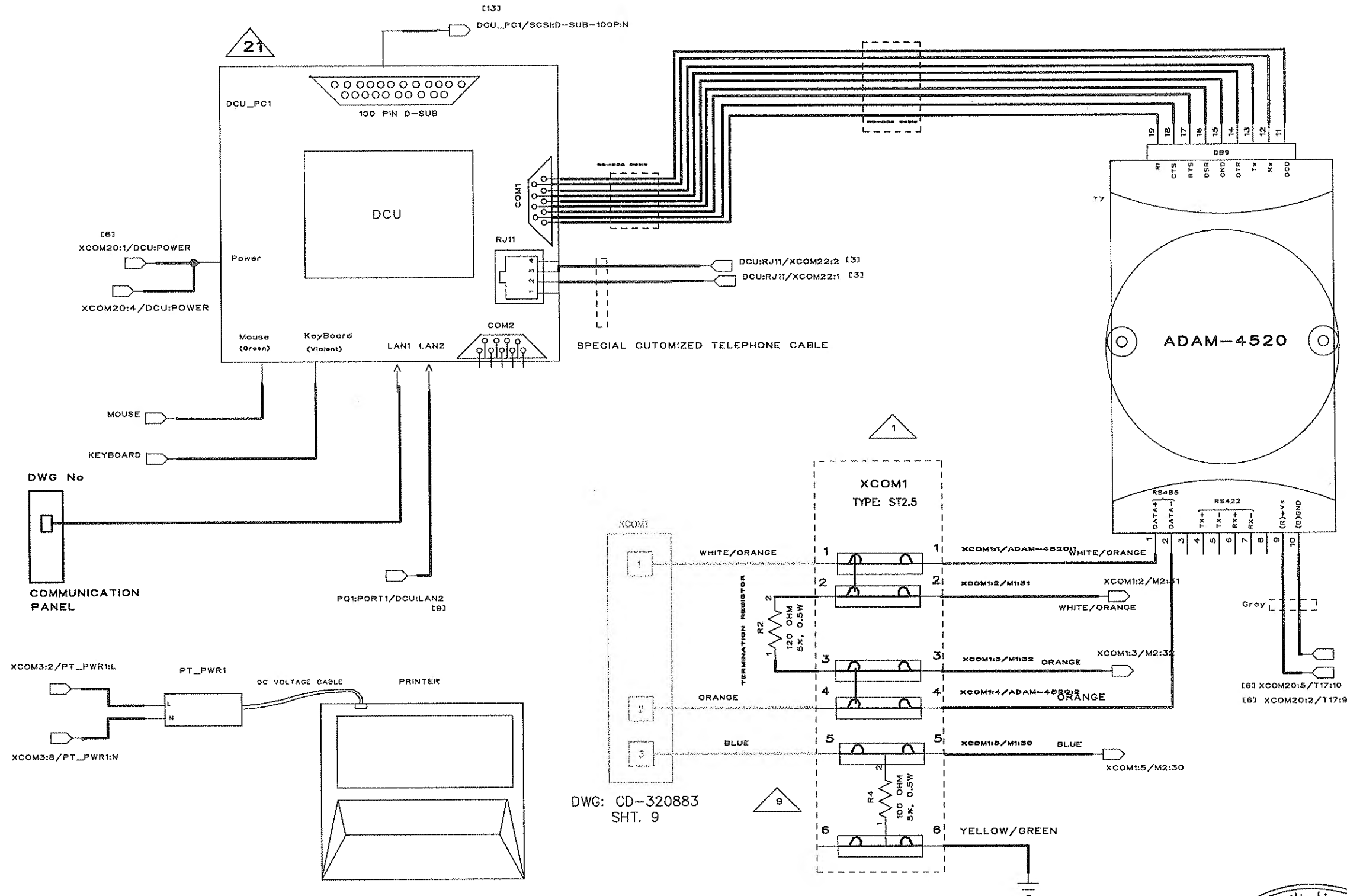
220VAC AND HEATER CONNECTIONS INSIDE PANEL
8/8 8162

| INDEX | PLANT NO. | DRAWING NUMBER | SHEET NO. | REV. NO. |
|-------|-----------|----------------|-----------|----------|
| P | C469 | CD-320881 | 04 OF 17 | 01 |



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| 1113113/00 | CD-320881 | 05 OF 17 | 01 |
| JOB ORDER NO. | INDEX | PLANT NO. | REVISION NO. |
| 1113113/00 | P | C469 | 05 OF 17 |
| CD-320881 | 05 OF 17 | 01 | |

COMMUNICATION INTERCONNECTION



DWG: CD-320883
SHT. 9

NOTES

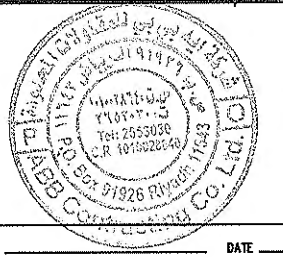
- EXISTING PANEL NOS AND EXISTING DRAWING NOS TO BE VERIFIED AT SITE

LEGEND

DCU - DATA COLLECTION UNIT
COM - SERIAL PORT
ADAM-4520 - RS232 TO RS485 CONVERTER
PT-PWR - POWER FOR PRINTER
D-SUB - DIGITAL I/O BOARD CABLE
RS-485 - COMMUNICATION CABLE

REFERENCE DRAWINGS

| DRAWING TITLE | DRAWING NO. |
|-----------------------|-------------|
| DRAWING CONTROL SHEET | CD-293869 |
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| REV. NO. | DATE | BY | DESCRIPTION | CHKD. | CERT. | APPD. |
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OPR'S DEPT.: ENG. DEPT.:

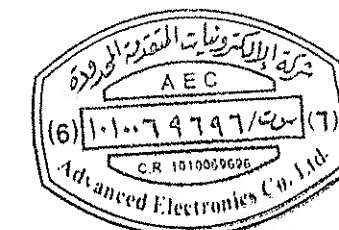
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DOC NO. E-123456 REV NO. 00

DCU PC COMMUNICATION
CONNECTIONS INSIDE PANEL
S/S 8162

RIYADH SAUDI ARABIA

| JOB ORDER NO. | INDEX | PLANT NO. | DRAWING NUMBER | SHEET NO. | REV. NO. |
|---------------|-------|-----------|----------------|-----------|----------|
| 1113113/00 | P | C469 | CD-320881 | 05 OF 17 | 01 |

| MANUFACTURER NAME | DRAWING NO. | SHEET NO. | REV. NO. |
|-------------------|-------------|-----------|----------|
| AEC | CD-320881 | 05 OF 17 | 01 |



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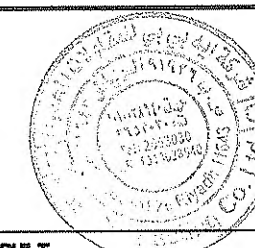
LEGEND

FQ - FIELD CONTACT CONTROLS FOR
SWITCHING BETWEEN BUSBAR

TL - TELEPHONE JACK

REFERENCE DRAWINGS

| DRAWING TITLE | DRAWING NO. |
|-----------------------|-------------|
| DRAWING CONTROL SHEET | CD-293969 |
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DOC NO. E-123456 REV. NO. 00

125 VDC CONNECTIONS INSIDE PANEL

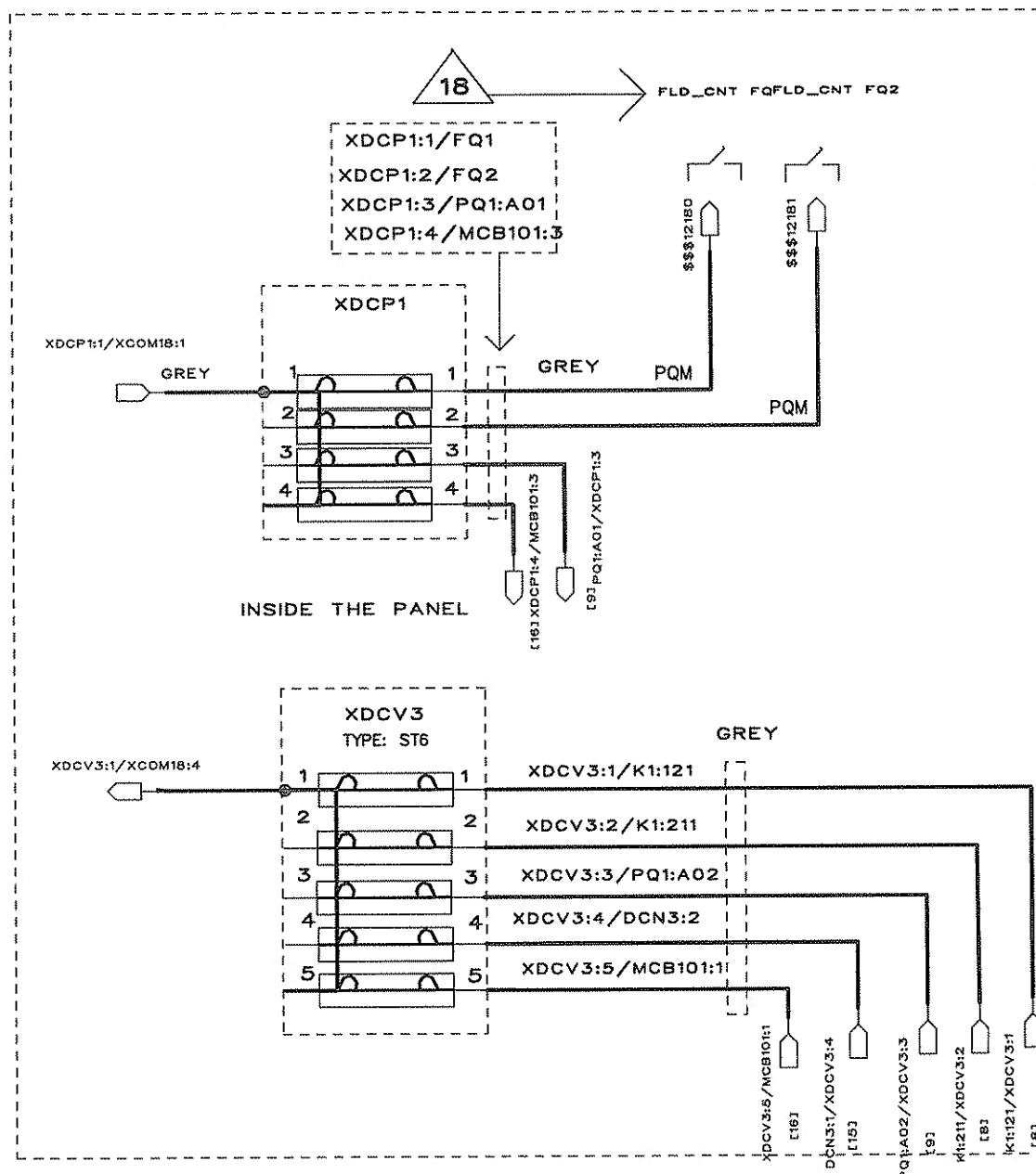
8/8 8162

RIYADH SAUDI ARABIA

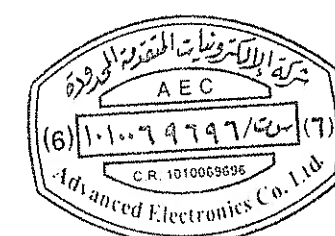
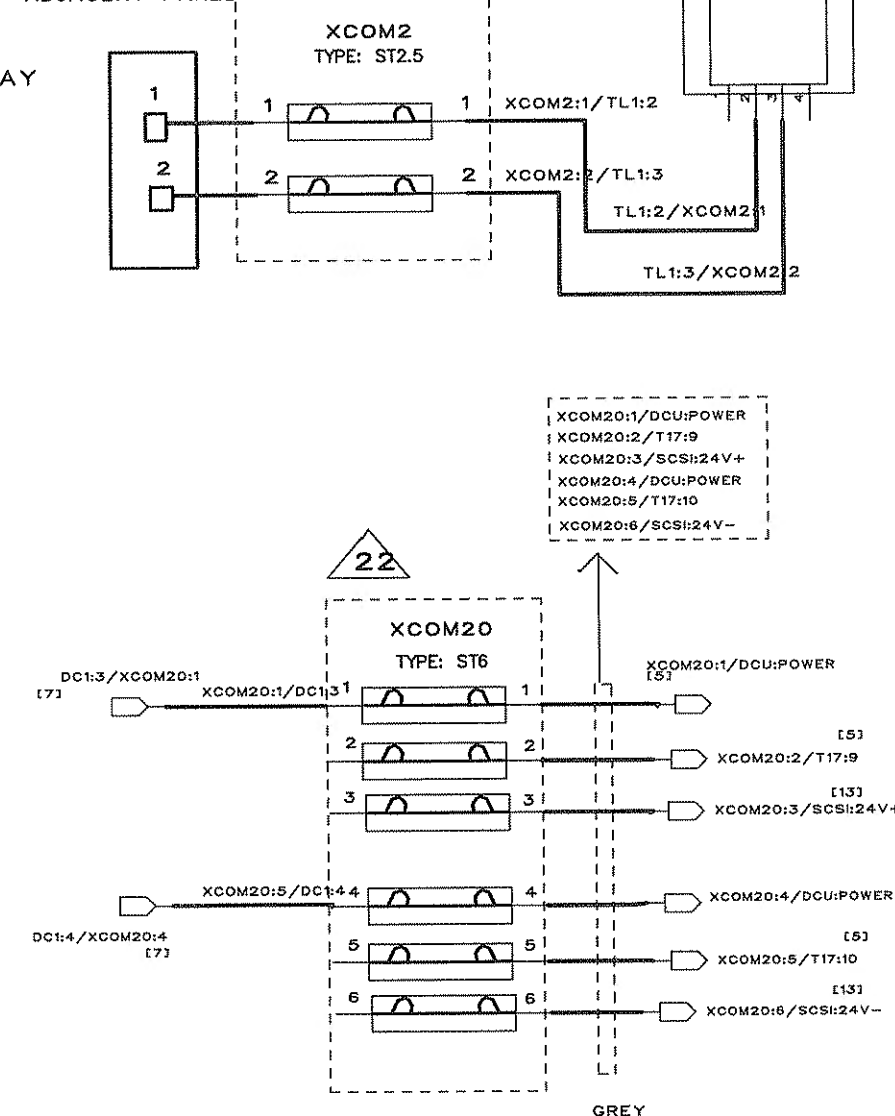
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| 11131113/00 | P | C469 | CD-320881 | 06 OF 17 | U1 |

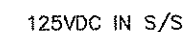
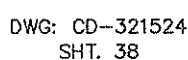
SEC CAP-A 12004/031
[040] [VECTOR]

DC VOLTAGE FOR RELAY



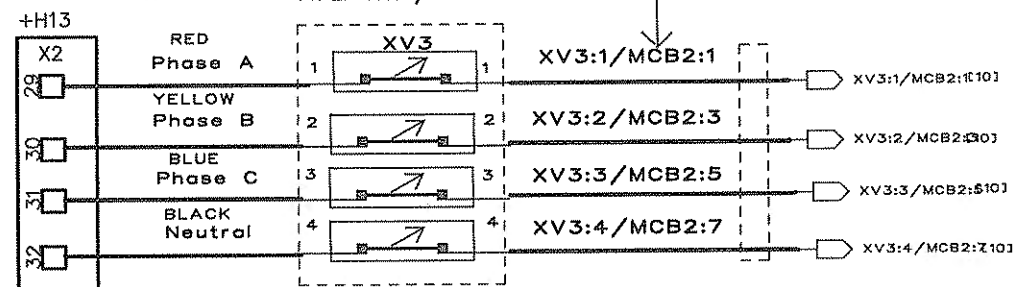
ADJACENT PANEL





125VDC IN S/S

DC VOLTAGE



SEC CAD--A 12004/03
[DAG] VECTOR

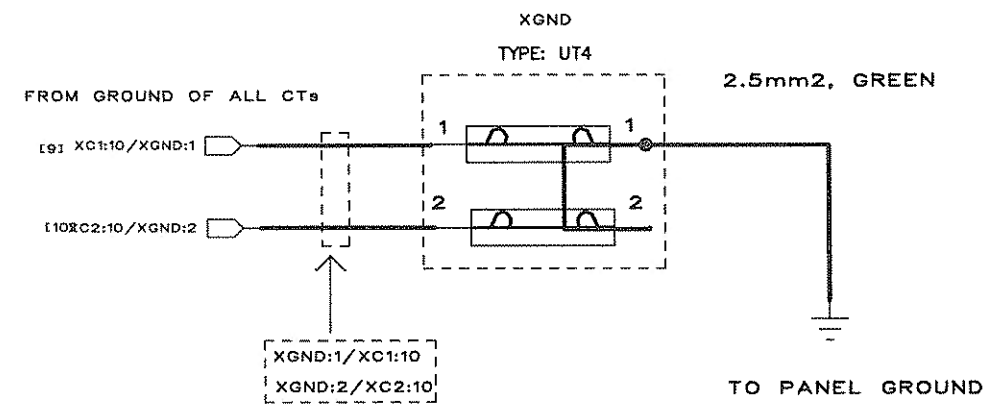
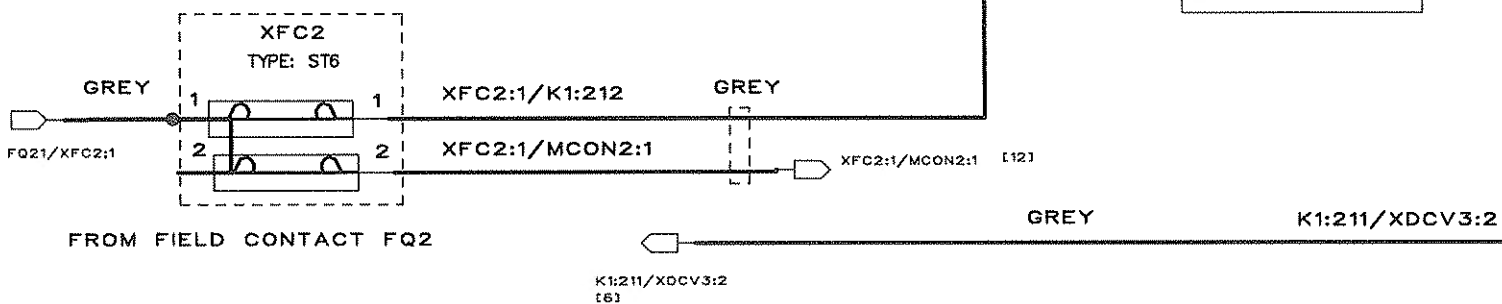
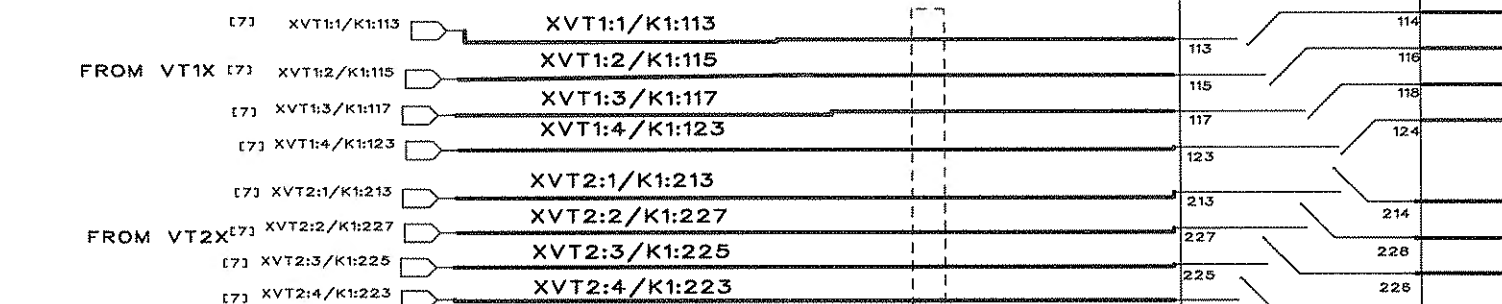
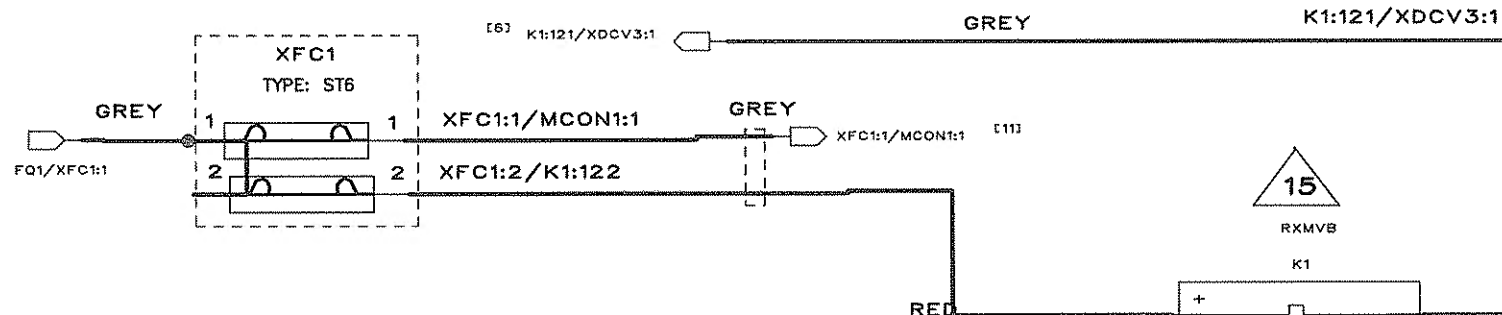
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| 01 | 17 | 08/07/17 | MRA | | | 01 | 17 | 08/07/17 | MRA | | |

BISTABLE RELAY FOR PQ METER

TO SS_DC_VOLT_NEG

FROM FIELD CONTACT FQ1



NOTES
1. EXISTING PANEL NOS AND EXISTING DRAWING
NOS TO BE VERIFIED AT SITE

LEGEND
K1 - BISTABLE RELAY (ABB) FOR PQM
RXMVB - ABB BISTABLE RELAY TYPE
FQ - FIELD CONTACT

| DRAWING TITLE | DRAWING NO. |
|-----------------------|-------------|
| DRAWING CONTROL SHEET | CD-293969 |



| REV. NO. | DATE | BY | DESCRIPTION | CHKD. | CERT. | APPD. |
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| 1 | 13/07 | MRA | DETAIL DESIGN | MRA | AS | |
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Saudi Electricity Company

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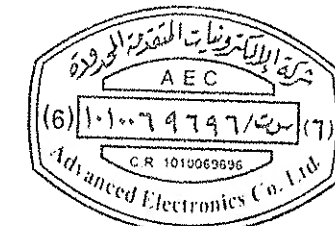
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RELAY FOR PQ METER
CONNECTIONS INSIDE PANEL
S/S 8162

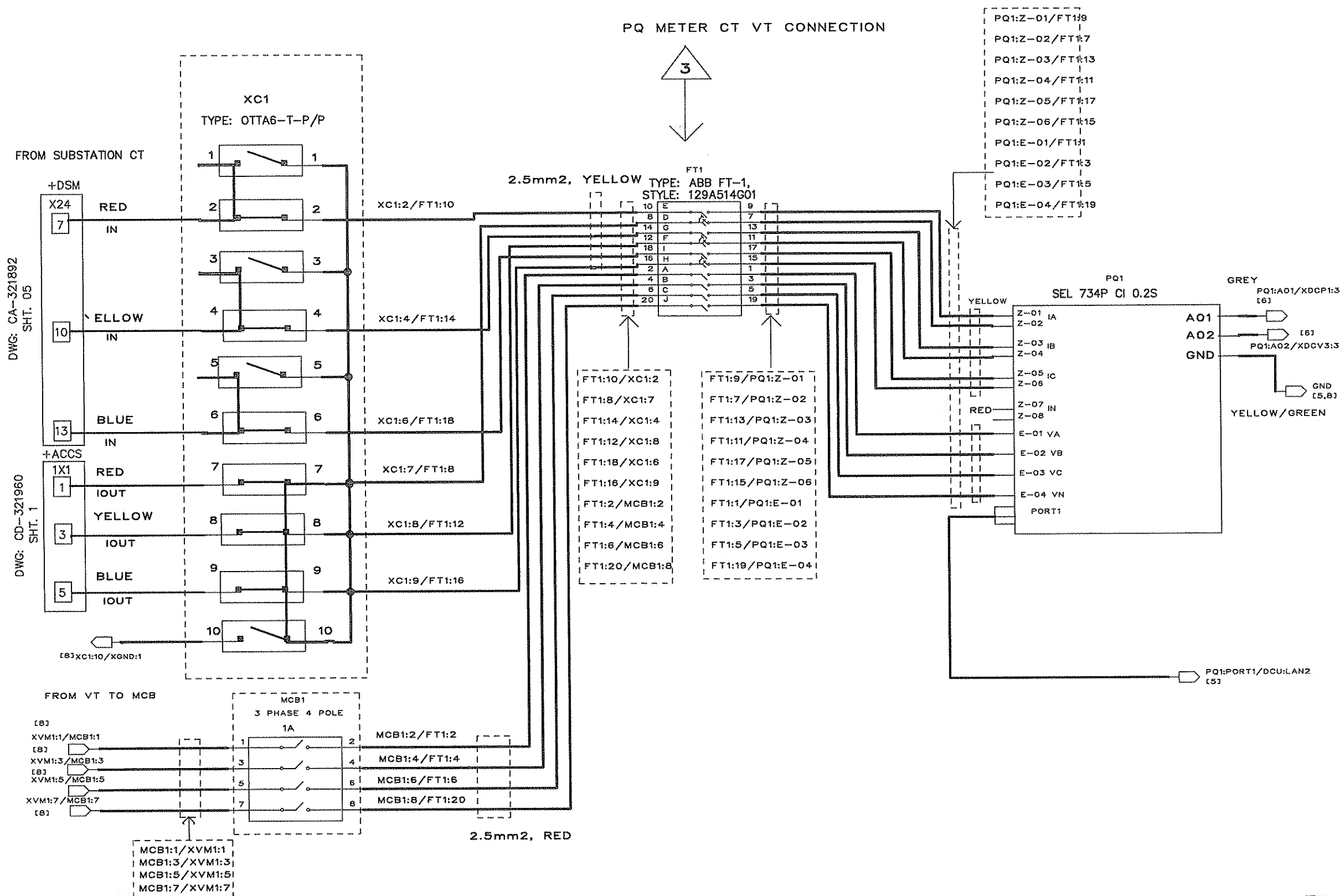
RIYADH SAUDI ARABIA

| JOB ORDER NO. | INDEX | PLANT NO. | DRAWING NUMBER | SHEET NO. | REV. NO. |
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| 1113113/00 | P | C469 | CD-320881 | 08 OF 17 | 01 |

| MANUFACTURER NAME | DRAWING NO. | SHEET NO. | REV. NO. |
|-------------------|-------------|-----------|----------|
| AEC | CD-320881 | 08 OF 17 | 01 |



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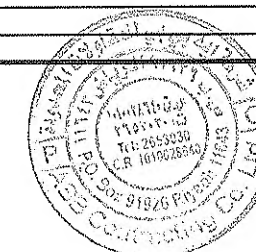
NOTES

1. EXISTING PANEL NOS AND EXISTING DRAWING
NOS TO BE VERIFIED AT SITE

LEGEND

PQ - POWER QUALITY METER
FT - FLIXITYPE TEST SWITCH

REFERENCE DRAWINGS

[illegible]

AS-BUILT BY _____ DATE _____

| 1 | 13/07 | MRA | DETAIL DESIGN | MRA | AS | | |
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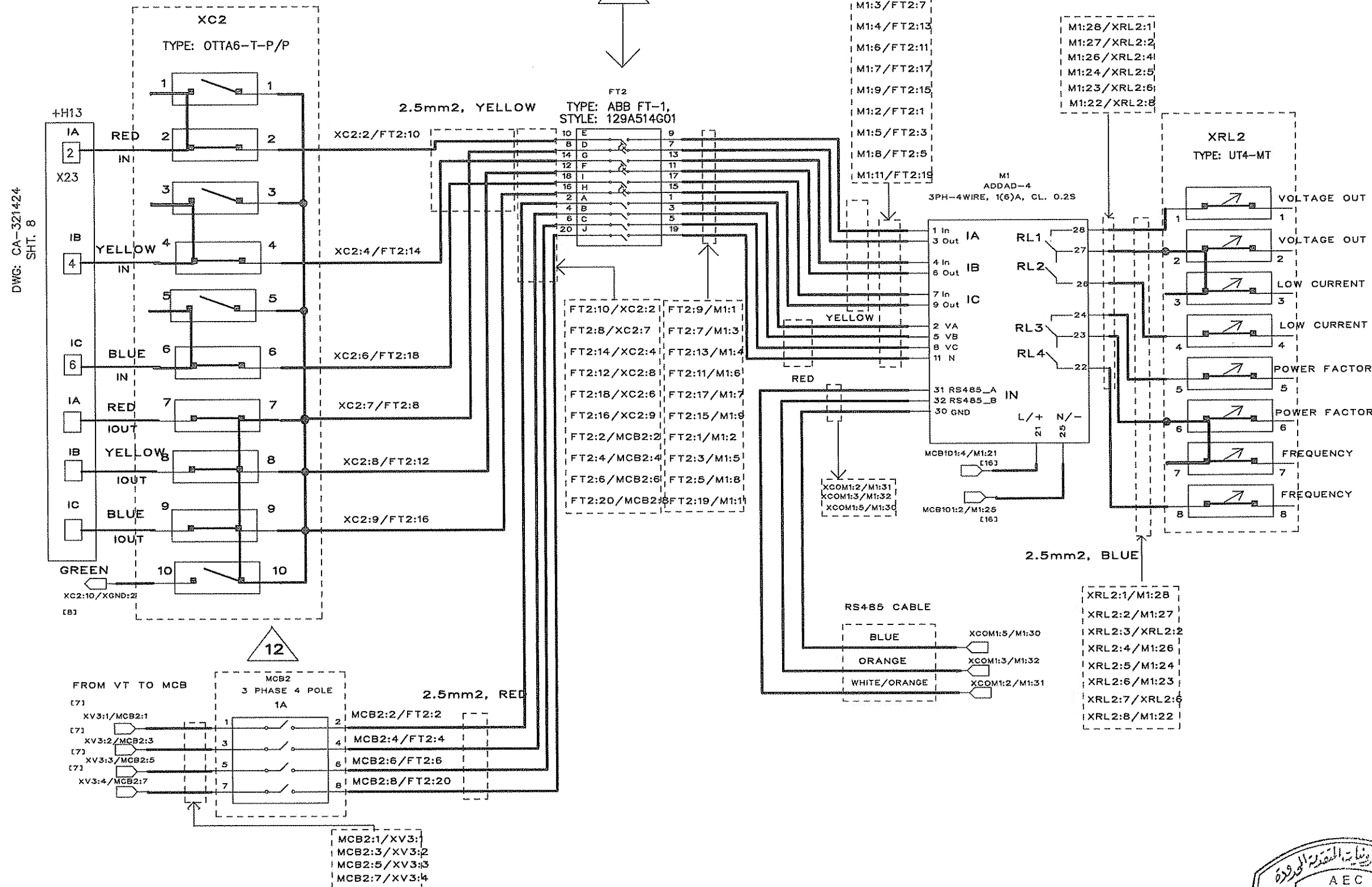
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PQ METER
CONNECTIONS INSIDE PANEL
S/S 8162

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| RIYADH | SAUDI ARAB |
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| JOB ORDER NO. | INDEX | PLANT NO. | DRAWING NUMBER | SHEET NO. RE |
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| 1113113/00 | P | C469 | CD-320881 | 09 OF 17 |

FROM SUBSTATION CT



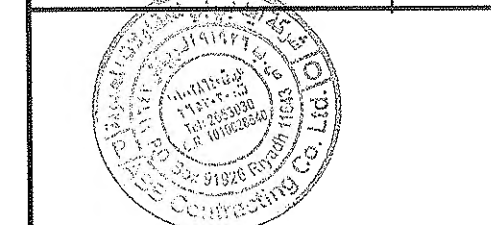
NOTES

1. EXISTING PANEL NOS AND EXISTING DRAWING
NOS TO BE VERIFIED AT SITE

LEGEND

M1 - DIGITAL REVENUE METER (C1 0.2)
FT - FLIXTYPE TEST SWITCH

| REFERENCE DRAWINGS | |
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| DRAWING CONTROL SHEET | CD-293969 |
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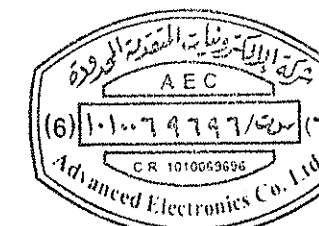
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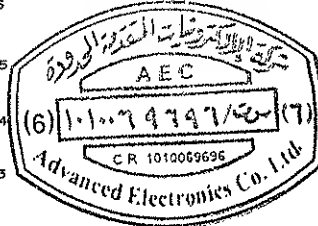
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DOC NO. E-123456 REV NO. 00

REV METER
CONNECTIONS INSIDE PANEL
S/S 8162

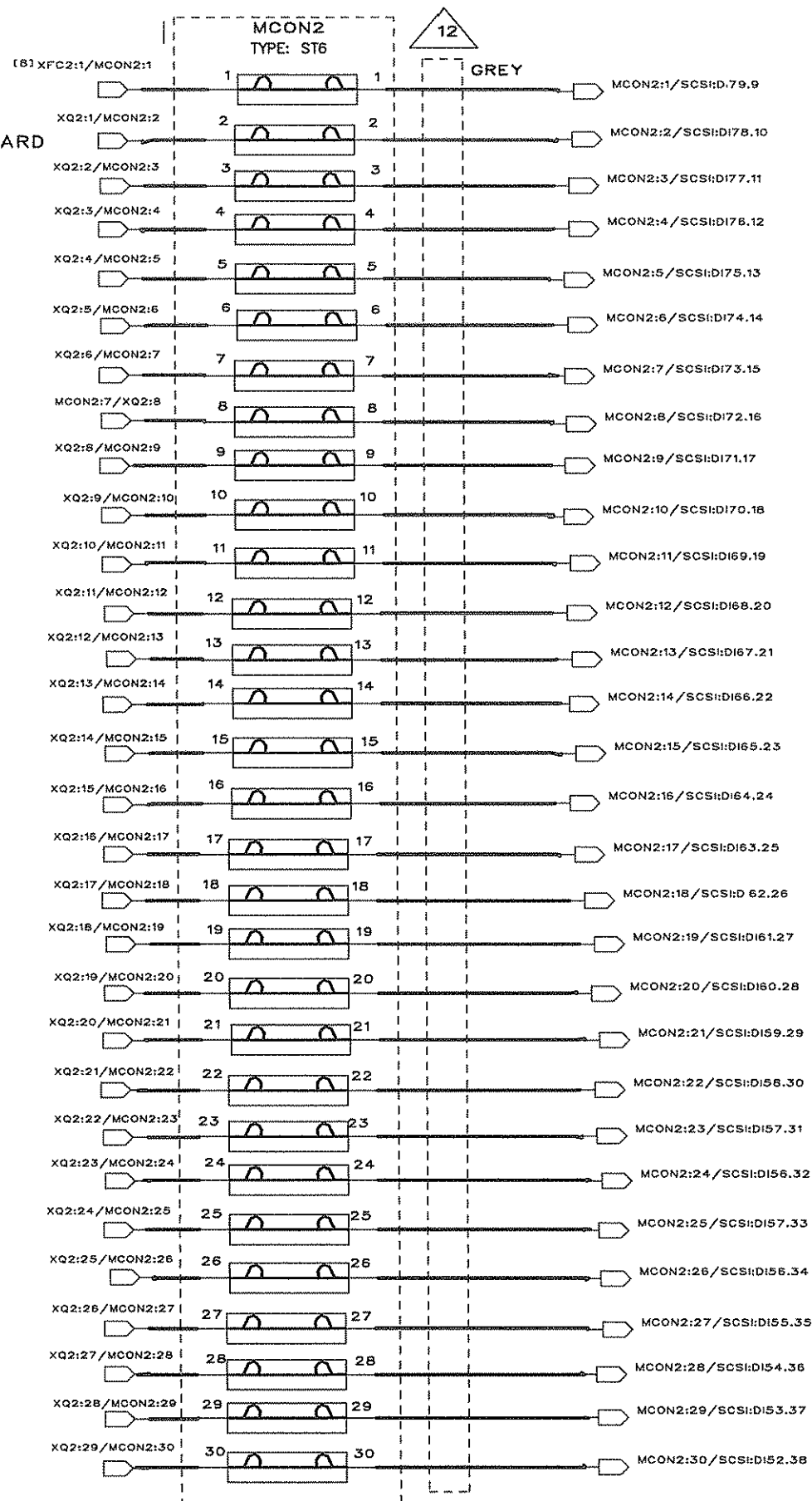
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| INDEX | PLANT NO. | DRAWING NUMBER | SHEET NO. REV. NO. |
| 1113113/00 | P | C469 | CD-320881 10 OF 17 01 |





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| RIYADH | | SAUDI ARAB | |
| INDEX | PLANT NO. | DRAWING NUMBER | SHEET NO. REV. |
| P | C469 | CD-320881 | 11 OF 17 |

R DIGITAL I/O BOARD



NOTES

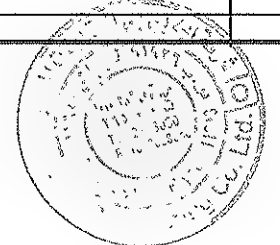
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NOS TO BE VERIFIED AT SITE

LEGEND

MCON -- CONTROL INPUTS FOR INPUT
BOARD

REFERENCE DRAWINGS

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| DRAWING CONTROL SHEET | CD-293969 |
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Saudi Electricity Company

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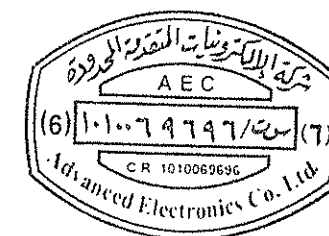
INPUTS TO DIGITAL I/O BOARD

S/S 6162

RIYADH SAUDI ARABIA

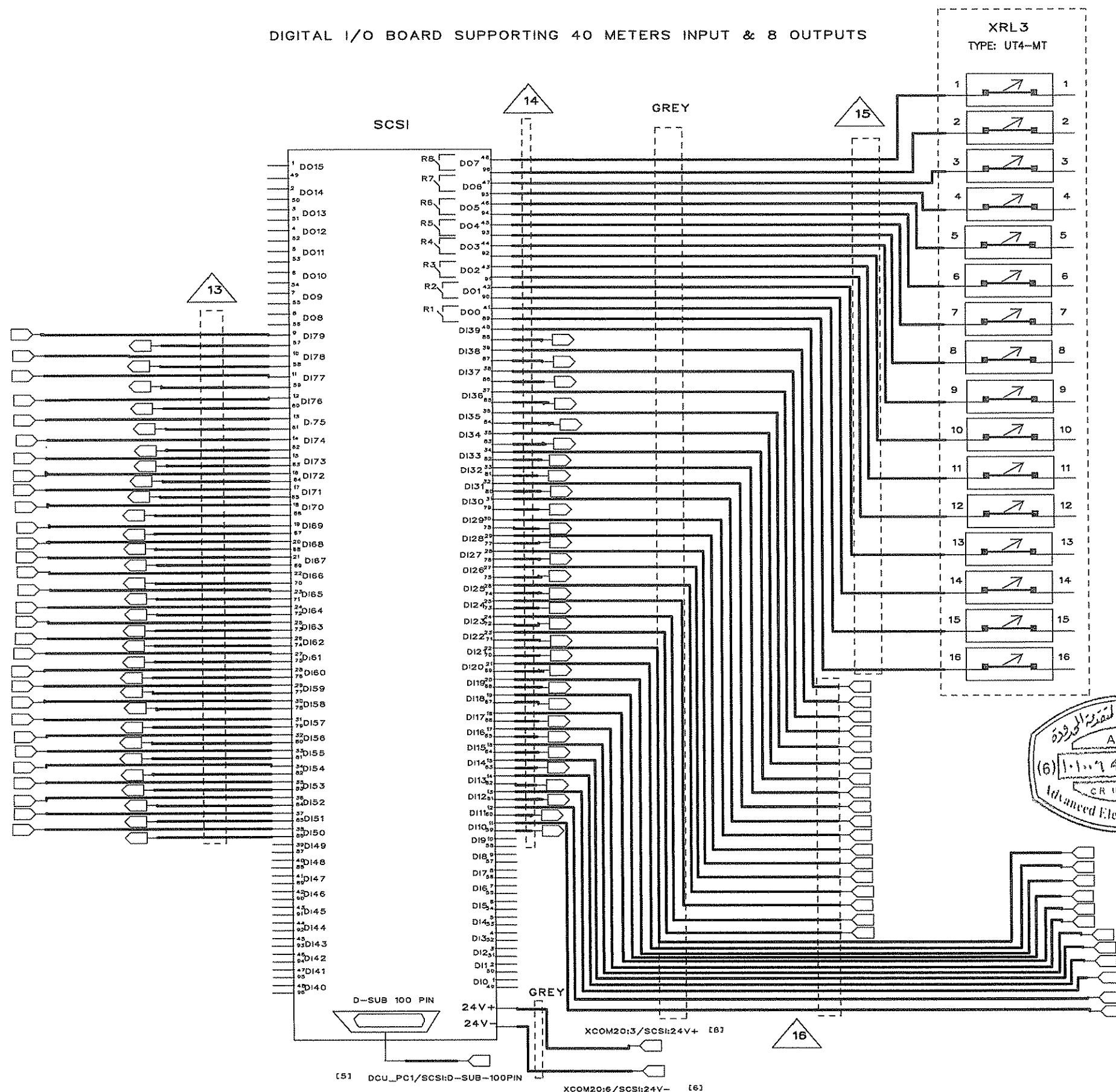
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| 1113113/00 | P | C469 | CD-320881 | 12 OF 17 | 01 |

| MANUFACTURER NAME | | |
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| AEC | | |
| DRAWING NO. | SHEET NO. | REV NO. |
| CD-320881 | 12 OF 17 | 01 |



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DIGITAL I/O BOARD SUPPORTING 40 METERS INPUT & 8 OUTPUTS



NOTES

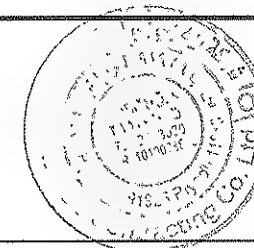
1. EXISTING PANEL NOS AND EXISTING DRAWING NOS TO BE VERIFIED AT SITE

LEGEND

SCSI - DIGITAL ONPUT OUTPUT BOARD
XRL - DIGITAL O/P SIGNAL FROM DCU

REFERENCE DRAWINGS

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| DRAWING CONTROL SHEET | CD-293969 |
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AS-BUILT BY _____ DATE _____

| REV. NO. | DATE | BY | DESCRIPTION | CHKD. | DEVL. | APPR. |
|----------|-------|-----|---------------|-------|-------|-------|
| 1 | 13/07 | MRA | DETAIL DESIGN | MRA | AS | |
| 0 | 12/01 | MRA | BASE DESIGN | MRA | AS | |

الشركة السعودية للكهرباء
Saudi Electricity Company

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DOC NO. E-123456 REV. NO. 00

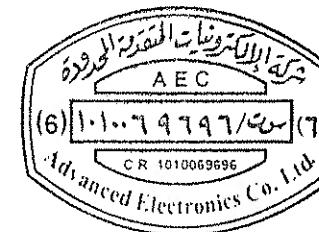
DIGITAL INPUT / OUTPUT BOARD

S/S 8162

| INDEX | PLANT NO. | DRAWING NUMBER | SHEET NO. REV. NO. |
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| P | C469 | CD-320881 | 13 OF 17 01 |

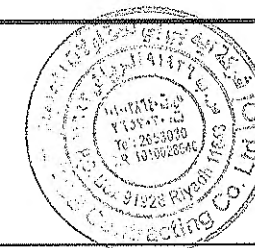
JOB ORDER NO.
1113113/00

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| MANUFACTURER NAME | | |
| AEC | | |
| DRAWING NO. | SHEET NO. | REV NO. |
| CD-320861 | 14 OF 17 | 01 |



1. EXISTING PANEL NOS AND EXISTING DRAWING
NOS TO BE VERIFIED AT SITE

DCN - NEGATIVE OF DC VOLTAGE

[illegible]

AS-BUILT BY _____ DATE _____

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| 1 | 13/07 | MRA | DETAIL DESIGN | | | | MRA | AS | |
| 0 | 12/01 | MRA | BASE DESIGN | | | | MRA | AS | |
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Saudi Electricity Company

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NEGATIVE FORM DIGITAL I/O BOARD

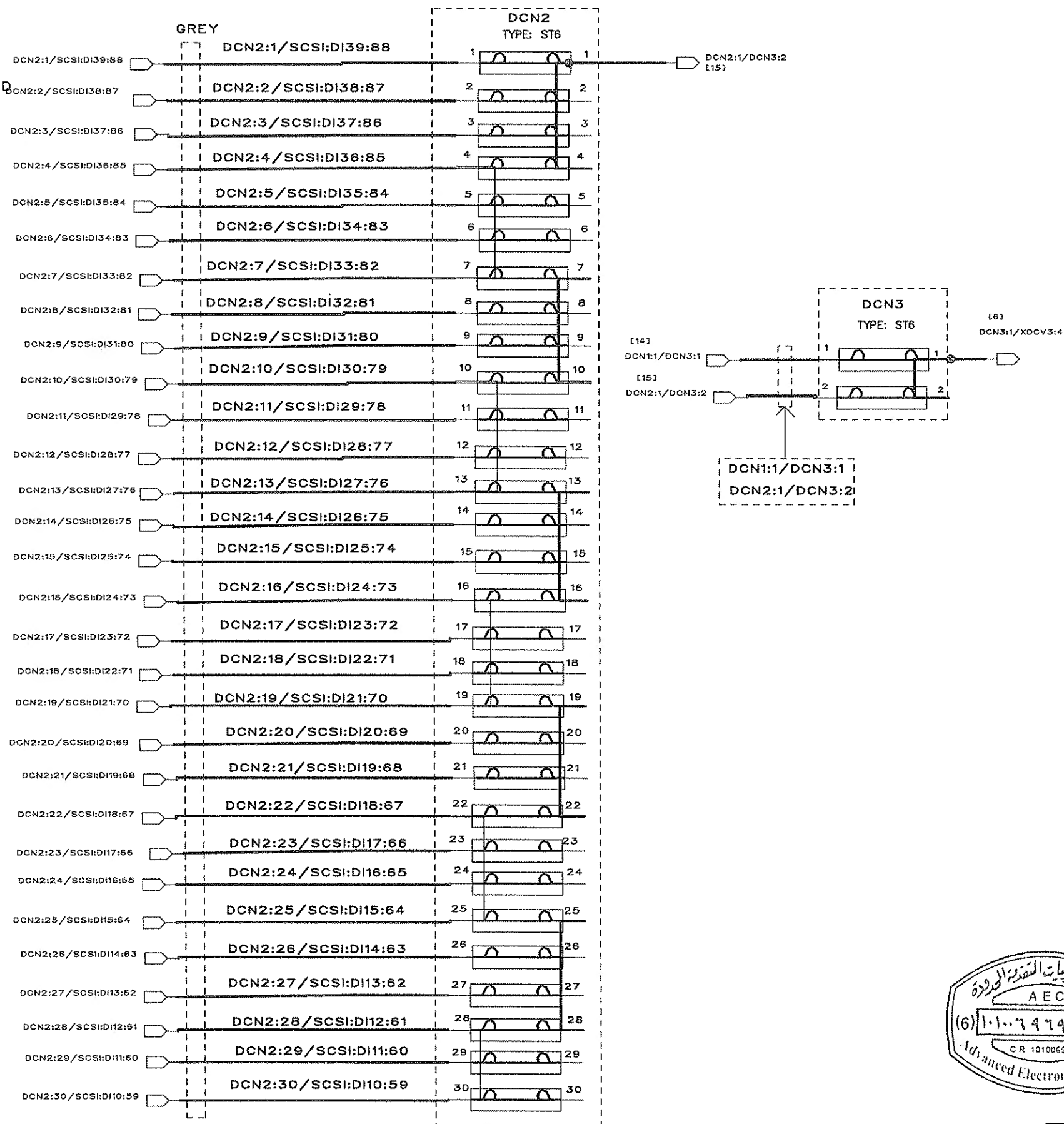
S/S 8162

| | |
|--------|------------|
| RIYADH | SAUDI ARAB |
|--------|------------|

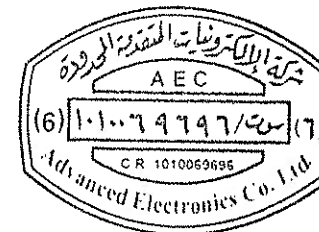
| INDEX | PLANT NO. | DRAWING NUMBER | SHEET NO. REV. |
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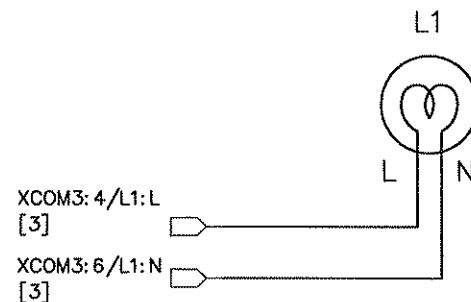
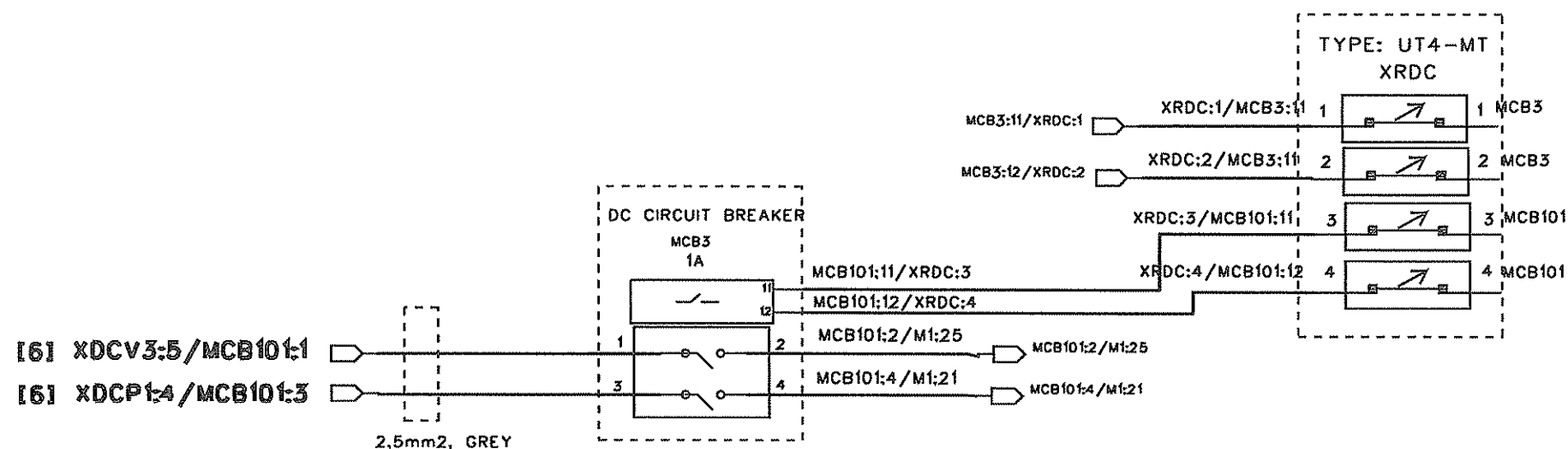
SEC CAD-A 12004/03
[DMB] [VECTOR]

NEGATIVE OF DIGITAL I/O BOARD



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| NOTES | | | |
| 1. EXISTING PANEL NOS AND EXISTING DRAWING NOS TO BE VERIFIED AT SITE | | | |
| LEGEND | | | |
| DCN - NEGATIVE OF DC VOLTAGE | | | |
| REFERENCE DRAWINGS | | | |
| DRAWING TITLE | | DRAWING NO. | |
| DRAWING CONTROL SHEET | | CD-293969 | |
| AS-BUILT BY _____ DATE _____ | | | |
| 1 | 13/07 | MRA | DETAIL DESIGN |
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| الشركة السعودية للكهرباء Saudi Electricity Company | | | |
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| DATE STARTED: _____ DATE COMPLETED: _____ | | | |
| DPR/G. DEPT. _____ ENG. DEPT. _____ | | | |
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| RIYADH SAUDI ARABIA | | | |
| JOB ORDER NO. | INDEX | PLANT NO. | DRAWING NUMBER |
| 1113113/00 | P | C469 | CD-320881 |
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NOTES

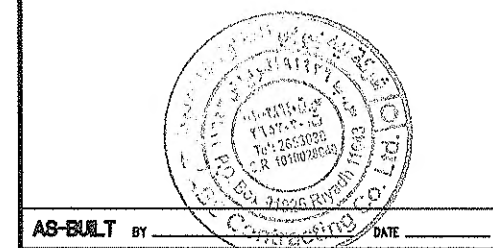
1. EXISTING PANEL NOS AND EXISTING DRAWING NOS TO BE VERIFIED AT SITE

LEGEND

L1 - LAMP

XRDC - O/P OF AUXILIARY CONTACT MONITORING DC MCB VOLTAGE

| REFERENCE DRAWINGS | |
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| DRAWING TITLE | DRAWING NO. |
| DRAWING CONTROL SHEET | CD-283969 |
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| REV. NO. | DATE | BY | DESCRIPTION | CHKD. | CERT. | APPD. |
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| 0 | 12/01 | MRA | BASE DESIGN | MRA | AS | |

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Saudi Electricity Company

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DC AUX. VOLTAGE FOR REV. METER

S/S 8162
RIYADH SAUDI ARABIA
JOB ORDER NO. 1131113/00 INDEX P PLANT NO. C469 DRAWING NUMBER CD-320881 SHEET NO. 16 OF 17 REV. NO. 01

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MCON2:1/SCSI:DI79.9
MCON2:2/SCSI:DI78.10
MCON2:3/SCSI:DI77.11
MCON2:4/SCSI:DI76.12
MCON2:5/SCSI:DI75.13
MCON2:6/SCSI:DI74.14
MCON2:7/SCSI:DI73.15
MCON2:8/SCSI:DI72.16
MCON2:9/SCSI:DI71.17
MCON2:10/SCSI:DI70.18
MCON2:11/SCSI:DI69.19
MCON2:12/SCSI:DI68.20
MCON2:13/SCSI:DI67.21
MCON2:14/SCSI:DI66.22
MCON2:15/SCSI:DI65.23
MCON2:16/SCSI:DI64.24
MCON2:17/SCSI:DI63.25
MCON2:18/SCSI:DI62.26
MCON2:19/SCSI:DI61.27
MCON2:20/SCSI:DI60.28
MCON2:21/SCSI:DI59.29
MCON2:22/SCSI:DI58.30
MCON2:23/SCSI:DI57.31
MCON2:24/SCSI:DI56.32
MCON2:25/SCSI:DI55.33
MCON2:26/SCSI:DI54.34
MCON2:27/SCSI:DI53.35
MCON2:28/SCSI:DI52.36
MCON2:29/SCSI:DI51.37
MCON2:30/SCSI:DI50.38

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SCSI:DI79.9/MCON2:1
SCSI:DI79.57/DCN1:1
SCSI:DI78.10/MCON2:2
SCSI:DI78.58/DCN1:2
SCSI:DI77.11/MCON2:3
SCSI:DI77.59/DCN1:3
SCSI:DI76.12/MCON2:4
SCSI:DI76.60/DCN1:4
SCSI:DI75.13/MCON2:5
SCSI:DI75.61/DCN1:5
SCSI:DI74.14/MCON2:6
SCSI:DI74.62/DCN1:6
SCSI:DI73.15/MCON2:7
SCSI:DI73.63/DCN1:7
SCSI:DI72.16/MCON2:8
SCSI:DI72.64/DCN1:8
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SCSI:DI50.86/DCN1:30

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MCON1:3/SCSI:DI37.38
MCON1:4/SCSI:DI36.37
MCON1:5/SCSI:DI35.36
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MCON1:26/SCSI:DI14.15
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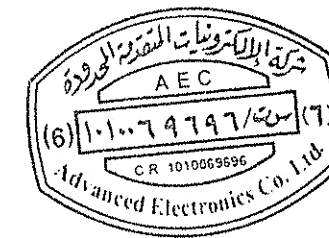
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SCSI:DI24.73/DCN2:16

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NOTES

1. EXISTING PANEL NOS AND EXISTING DRAWING NOS TO BE VERIFIED AT SITE

LEGEND

REFERENCE DRAWINGS

| DRAWING TITLE | DRAWING NO. |
|-----------------------|-------------|
| DRAWING CONTROL SHEET | CD-293969 |
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AS-BUILT

| REV. NO. | DATE | BY | DESCRIPTION | CHKD. | CERT. | APPD. |
|----------|-------|-----|---------------|-------|-------|-------|
| 1 | 13/07 | MRA | DETAIL DESIGN | MRA | AS | |
| 0 | 12/01 | MRA | BASE DESIGN | MRA | AS | |

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Saudi Electricity Company

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CHECKED BY: AS

SCALE: NONE

DATE STARTED:

DATE COMPLETED:

DRG. DEPT.:

ENG. DEPT.:

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CONNECTION TABLES FOR THE DIGITAL I/O BOARD

S/S 8162

RIYADH

SAUDI ARABIA

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